Perception and Attitued of Rural Women Towards Solar Cooker

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ABSTRACT

Perception and attitude are critical and important components of human behaviour. The adoption of any technology or innovation is largely governed by the perceptual framework and attitude of the beneficiaries. Applications of solar technologies are yet to be explored and used by the people in rural areas though they claim to provide eco-friendly and cost effective technologies for rural areas. The scientists have evolved solar cookers of different models and box type has been recommended strongly for household purposes. With this background, in present study efforts were made to explore perceptions and attitude of rural women towards solar cooker. The results regarding perception were recoded on nine attributes with paired comparison technique and it was found that relative advantage and labour saving features were the most preferred attributes of the solar cooker. Cost and terminality were the least preferred attributes of the technology. Further regarding attitudes, it was found that 56.0 per cent of the respondents had neutral attitude towards solar cooker. Statement-wise analysis also indicated that for 13 positive statements the attitude of women were either favourable or neutral. The results can be an eye opener for field functionaries to introduce the solar cooker by application of appropriate interventions.

Key words : *Perception; Attitude; Solar.*

Nature, man and energy are the three basic constituents of human civilization. The artful sustenance of energy through technologies has been recognized as an essential economic input in the process of development. No country can make headway in its developmental efforts without improving the conditions of its people and providing adequate and regular sources of energy for various purposes is one of the important areas of concern. In view of the increasing population, escalating prices and shrinking reserves of oil and coal, alternate sources of energy required to explored and propagated to meet the demand at public level. Household sector is on of the largest consumer of energy accounting for approximately 50 per cent of the total energy used in the form of non-commercial fuels like wood, agro waste and dung cakes.

Cooking is the daily activity performed in every household requiring various types of fuels. Use of various types of wood and dung cake for cooking purpose is not only harmful for health but it is one of the major causes of environmental pollution and energy crisis. Tapping the alternate sources of energy for cooking purpose can check energy crisis to certain extent and solar cooker is one of them. In spite of extensive efforts on the part of government to promote solar cookers among villagers the response is not that much encouraging. It is a common notion that human beings tend to expose themselves to innovations that suit their needs, interests, beliefs or attitude. Positive attitude and correct perception towards any technology or innovation are the foundation pillars that determine its adoption rate. Present study was carried out with the specific objectives viz. (i) To assess the attitude of rural women towards solar cooker and (ii) Record the perception of respondents on different attributes of solar cooker

METHODOLOGY

Present study was conducted in Sirsa and Mahendergarh districts of Haryana state. Out of the five villages adopted by respective Krishi Vigyan Kendras, two were selected randomly. As solar cooker was a novel technology for rural women thus existing attitude and perception of the respondents was not studied. The data were collected after introducing solar cooker among women and they used it for one-week duration. Total sample of 100 women (50 from each district) who used the solar cooker was drawn and they acted as respondents for present study. Attitude scale developed by Yadav (1990) was used to measure attitude towards solar cooker. Response was obtained under three categories viz., agree,

undecided and disagree with assigned scores 3, 2 and 1, respectively for positive statements and for negative statements reverse scoring procedure was followed. Total scores and mean scores were calculated for each statement and attitude of women was categorized as favourable, neutral and unfavourable on the basis of mean scores obtained by them. The paired comparison technique as suggested by Edwards, 1969, were used to calculate scale values of the selected attributes (nine) based on perception of the respondents.

RESULTS AND DISCUSSION

Attitude of the respondents towards solar cooker : In order to have an in-depth understanding about attitude of women towards solar cooker they were grouped into three attitude categories viz. unfavourable (1-1.66 M.S.), neutral (1.67-1.33) and favourable (1.34-3.00). The distribution of respondents in each group is presented in Table 1.

It can be observed from Table 1 that 56 per cent of the total respondents were having neutral attitude regarding solar cooker while 31.0 per cent had unfavourable attitude and 13 per cent expressed favourable attitude towards this technology. It implied that the neutral attitude respondents needed to be persuaded and motivated to change their attitude towards favourable side.

Table 1. Distribution of the respondents as per their attitude towards solar cooker N= 100

Attitude categories	Number of respondents
Unfavourable (1-1.66)	31
Neutral (1.67-2.33)	56
Favourable (2.34-3.00)	13
Total	100

Attitude of rural women towards different aspects of solar cooker : Data presented in Table 2 indicated that there were 24 statements in the scale used for measuring attitude, out of which 13 statements were positive and remaining 11 were negative. Mean score for each statement was calculated and ranked accordingly. It was found that rural women expressed favourable attitude towards 6 statements, whereas for 10 statements neutral attitude was expressed and for remaining 8 statements unfavourable attitude was observed.

Out of 13 positive statements, women strongly agreed with 6 only and indicating favourable attitude. All the respondents unanimously agreed to the fact that use of solar cooker can be helpful in reducing environmental pollution and solar cooker containers are easier to clean than the commonly used pressure cooker or patilas (M.S. 3.00 for each) and were ranked first. The respondents in majority agreed with the statements that food cooked in solar cooker is tasty and nutritious (Ms. 2.96 and rank 3rd) and found it easy to use as no complicated technical know-how is required (Ms. 2.86). The respondents were also of the view that solar cooker is economical and time saving technology (M.S. 2.76, 2.72 and ranks 5th and 6th respectively).

Table 2. Attitude of respondents towards various aspects of solar cooker N= 100

Statement	Mean score	Rank
Environmental pollution through smoke can easily be safe guarded by the use of solar cooker (+)	3.00	1
Solar cooker is easy to clean because there is no overflowing of food items (+)	3.00	1
Food cooked in solar cooker is tasty and nutritious, therefore, one should not have any inhibition in its use (+)	2.96	3
Rural women can easily use solar cooker because on complicated technical know-how is needed for its use (+)	2.88	4
Solar cooker is a economical device (+)	2.76	5
No attention is required while cooking food in solar cooker which in turn saves time of women (+)	2.72	6
No maintenance cost is required for this device (+)	2.64	7
Solar cooker would assist rural women a great deal when they are away in the farm (+)	2.34	8
Why one should resort to other cooking devices when fuel is freely available under village conditions (-)	2.21	9
Sunlight is natural source of energy so one should make best use of it through solar cooker (+)	2.16	10
One should definitely buy solar cooker as initial cash payment on solar cooker is repaid at a longer run (+)	2.11	11
No cooking device can beat the quality of foods cooked on traditional Chulhas (-)	2.04	12
In order to release mental tension of food being burnt or overcooked house wives should cook food in solar cooker (+)	2.01	13
If one adopts solar cooker, FYM can be saved which can be used as fertilizer in the field (+)	1.74	14
Rural households have no utility of solar cooker as it does not fit into the rural cooking style (-)	1.73	15
Food cooked in solar cooker is not liked by all family members (-)	1.69	16
The suitability of solar cooker is limited as large quantity food stuffs can not be cooked in this easily(-)	1.56	17
Basic food ingredient Chapaties can not be cooked in solar cooker, therefore, its use is of no avail (-)	1.47	18
Solar cooked foods can be suitable for patients only but not for all members of the family (-)	1.35	19
It is a time saving device because four food items can be cooked at a time (+)	1.32	20
What is the utility of a solar cooker when it is totally nonfunctional in rainy season when house wives face acute problem of firewood(-)	1.14	21
Solar cooking requires open and protective place which is very difficult under village conditions (-)	1.06	22
Solar cooker can be hazardous for children (-)	1.05	23
Solar cooker is a costly device, therefore, everyone can not afford to buy it (-)	1.05	24

Table 3. Perception of the respondents towards solar cooker
N= 100

S.No.	Attribute	Weightage	Scale value
1.	Relative Advantage	7	1.053
2.	Cost of Innovation	9	0.000
3.	Cultural compatibility	3	0.860
4.	Labour Saving	8	0.916
5.	Trialbility	5	0.512
6.	Practicability	6	0.271
7.	Observability	4	0.677
8.	Terminality	1	0.194
9.	Simplicity/complexcity	2	0.294

Data further showed that the respondents had neutral attitude towards four negative statements as they neither agreed nor disagreed with the negative statements entitled "Why one should resort to other cooking devices when fuel is freely available under village conditions", "no cooking device can beat the quality of food cooked on traditional mud store", "rural households have no utility of solar cooker as it does not fit into the rural cooking style" and "the taste of food cooked in solar cooker is not liked by all family members", with M.S. 2.21, 2.04, 1.73 and 1.69, respectively. The statements were placed on 9th, 12th, 15th and 16th position in ranking hierarchy. The six positive statements indicating neutral attitude were "no maintenance cost is required", "solar cooker would assist rural women when they are away in farm", "best use of sunlight as a natural energy source can be done", "One should definitely buy solar cooker as initial cash payment is repaid in longer time" mental tension of house-wife due to burning or overcooking of food can be released by using solar cooker", and "FYM can be saved by using solar cooker" with M.S. 2.64, 2.34, 2.16, 2.11, 2.01 and 1.74 respectively and assigned 7th, 8th, 10th, 11th, 13th and 14th ranks.

Data further showed that the respondents agreed with seven negative statements and disagreed with one positive statement indicating unfavourable attitude towards these eight statements. The negative statements were, "the suitability of solar cooker is limited as large quantity of food stuff can not be cooked", (M.S. 1.56) "chapatis can not be cooked in solar cooker", "(M.S.1.47) "suitability of solar cooked food for patients", (M.S.1.35) "it is totally non-functional during rainy season when there is acute problem of fire wood," (1.14), "solar cooking requires open and protective area which is not possible under village condition" (M.S.1.06), "can be hazardous for children", (M.S.1.05) and "solar cooker is a costly device which can not be afforded by everyone" (M.S. 1.05).

The respondents strongly disagreed with the positive statement i.e. feasibility of solar cooker in terms of cooking four foods at a time with M.S. 1.32 and ranked at 20th position in hierarchy.

Perception of respondents regarding attributes of solar cooker : Table 3 indicated the scale values and the mean scores assigned to nine different attributes of the solar cooker. The hierarchical ranking of solar cooker attributes indicated that relative advantage (scale value =1.053) and labour saving (scale value =0.916) were perceived to be the best attributes of solar cooker by the respondents. The other attributes in order of magnitude were cultural compatibility (scale value =0.867), observability (scale value =0.677) and trialablity (scale value =0.512). The terminability (scale value =0.194) and cost of innovation (scale value =0.000) were the least preferred attributes of solar cooker. The limitation of solar cooker for preparing chapattis besides the money requirement for procurement could be some of the reasons leading to existing perception of the respondents. Yadav (1988) obtained similar results, where the perception of the rural women respondents were studied.

CONCLUSION

The results of study indicated that more than fifty per cent women found to have neutral attitude towards solar cooker and the 10 statements on which neutral attitude was observed have also been identified. Awareness camps, group meetings follow-up visits and motivational techniques can be helpful in changing the attitude of women from neutral to favourable side. It is imperative to tap the group of women having neutral opinion. It is well known fact that every technology has certain limitations. In case of solar cooker too limitations in terms of chapatti making being non functional during rainy season and perceived high cost are no exceptions. However, it was perceived as better in terms of relative advantage in terms of no maintenance charges, fuel, time and labour saving, health and environmental aspects need to be high lighted for changing attitude of the users.

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